

Meat and Poultry Inspection

1977

Report of the Secretary of Agriculture
to the Committee on Agriculture
House of Representatives

Committee on Agriculture,
Nutrition, and Forestry,
U.S. Senate

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Department of
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CONTENTS

	<u>Page</u>
Foreword.....	3
Authorities and responsibilities.....	4
Organization.....	7
Federal inspection.....	11
Ante-mortem and post-mortem inspection.....	11
Sanitation.....	14
Product processing.....	14
State inspection.....	16
Federal-State cooperative program.....	16
Talmadge-Aiken Act.....	19
Surveillance and compliance activities.....	21
Imports and exports.....	22
Staff activities.....	24
Scientific Services.....	24
Statistical Services.....	29
Technical Services.....	29
Training.....	32
Other developments.....	33
Salmonella Advisory Committee.....	33
Codex Alimentarius Commission.....	33
Expert Panel on Nitrites, Nitrates, and Nitrosamines.....	34
Summary of key program initiatives taken in 1977.....	35

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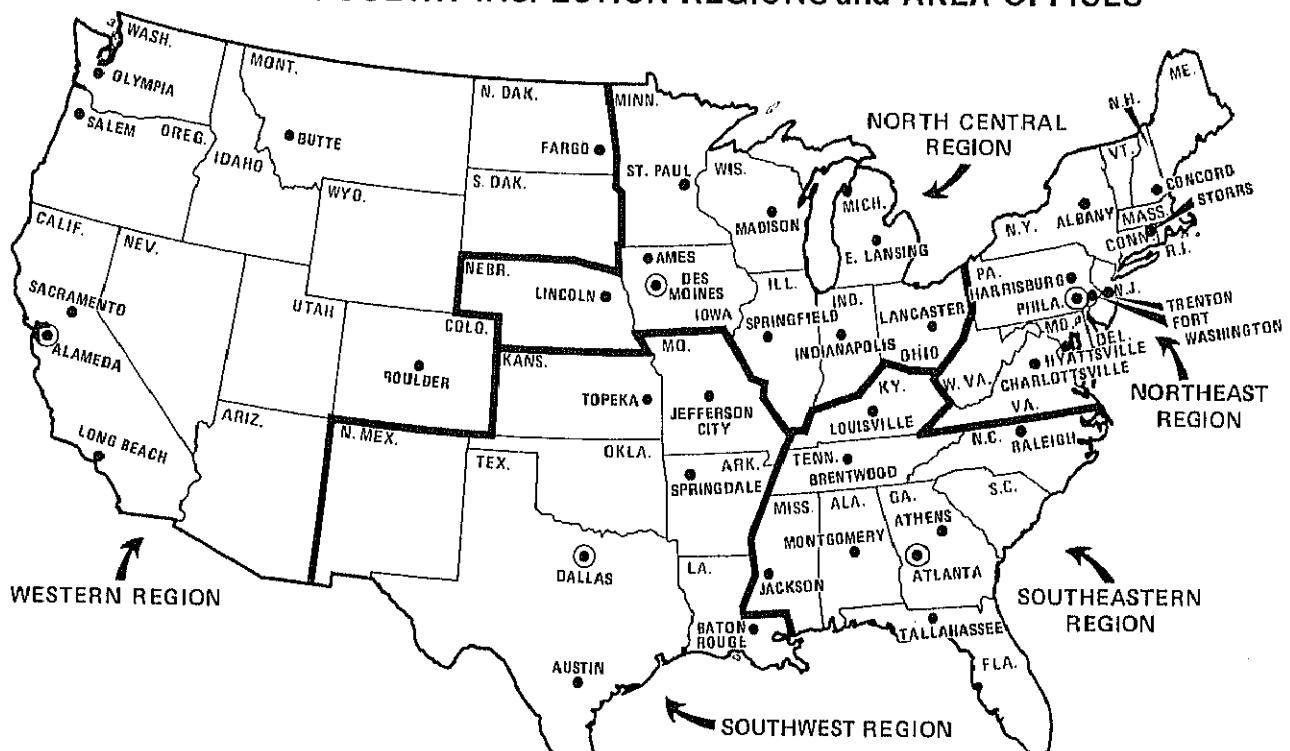
FOREWORD

This report to the Committee on Agriculture of the U.S. House of Representatives and the Committee on Agriculture, Nutrition, and Forestry of the U.S. Senate is submitted as required by section 301(c)(4) of the Federal Meat Inspection Act (21 U.S.C. 661), section 17 of the Wholesome Meat Act (21 U.S.C. 691), and sections 27 and 5(c)(4) of the Poultry Products Inspection Act, as amended (21 U.S.C. 470 and 21 U.S.C. 454).

Section 20 of the Federal Meat Inspection Act (21 U.S.C. 620) also calls for an annual report to Congress on the Foreign Meat Inspection Program. This report was submitted to Congress earlier this year.

MEAT and POULTRY INSPECTION REGIONS and AREA OFFICES

MEAT and POULTRY INSPECTION REGIONS and AREA OFFICES



● REGIONAL HEADQUARTERS

● AREA OFFICE - AREA OFFICE ALSO IN SAN JUAN, PUERTO RICO FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS. THE AREA OFFICE IN OLYMPIA, WASHINGTON SERVICES ALASKA AND THE AREA OFFICE IN SALEM, OREGON SERVICES HAWAII, GUAM, AND AMERICAN SAMOA.

AUTHORITIES AND RESPONSIBILITIES

The Federal Meat Inspection Act and Poultry Products Inspection Act, as amended, require the Secretary of Agriculture to inspect the slaughter of certain domestic livestock and poultry and the processing of meat and poultry products. The primary objective of this inspection is to insure that meat and poultry products distributed to consumers are wholesome, not adulterated, and properly marked, labeled, and packaged. In carrying out this complex task the Secretary has jurisdiction from the time livestock and poultry are received at the slaughtering establishments until the finished products are distributed in commerce to consumers, or otherwise distributed subject to the Acts.

Establishments preparing meat and poultry products for sale or distribution in interstate or foreign commerce are required to have Federal inspection unless exempted under the Acts. Those doing intrastate business in certain "nondesignated States" operate under State inspection programs that are required to effectively enforce requirements at least equal to those under the Federal Acts. Support is extended by USDA to State programs in the form of funds, training, and technical assistance. Federal inspection is required to be extended to intrastate operations in those "designated" States that do not develop or maintain an inspection program with requirements at least equal to those under the Federal Acts.

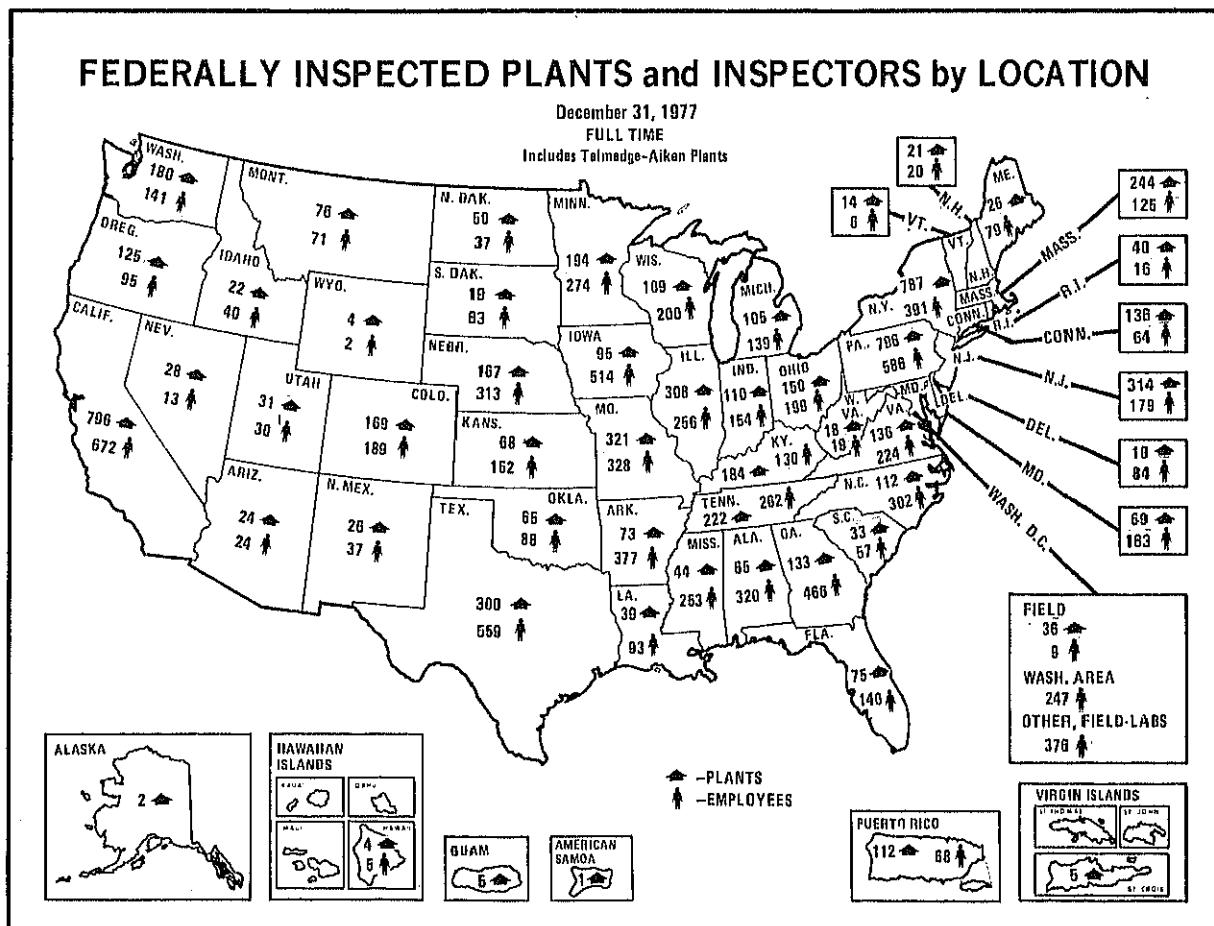
USDA is responsible for applying uniform standards with respect to sanitation, inspection procedures, and product labeling at all establishments under Federal inspection. It is also responsible for assessing the effectiveness of State inspection programs to assure that standards at least equal to those under the Federal Meat Inspection Act and the Poultry Products Inspection Act are being applied by the States to meat and poultry establishments under their jurisdiction.

Finally, through its Compliance Staff, USDA conducts, reviews, and investigates for possible violations of the meat and poultry inspection laws.

The above activities are discussed in more detail in this report.

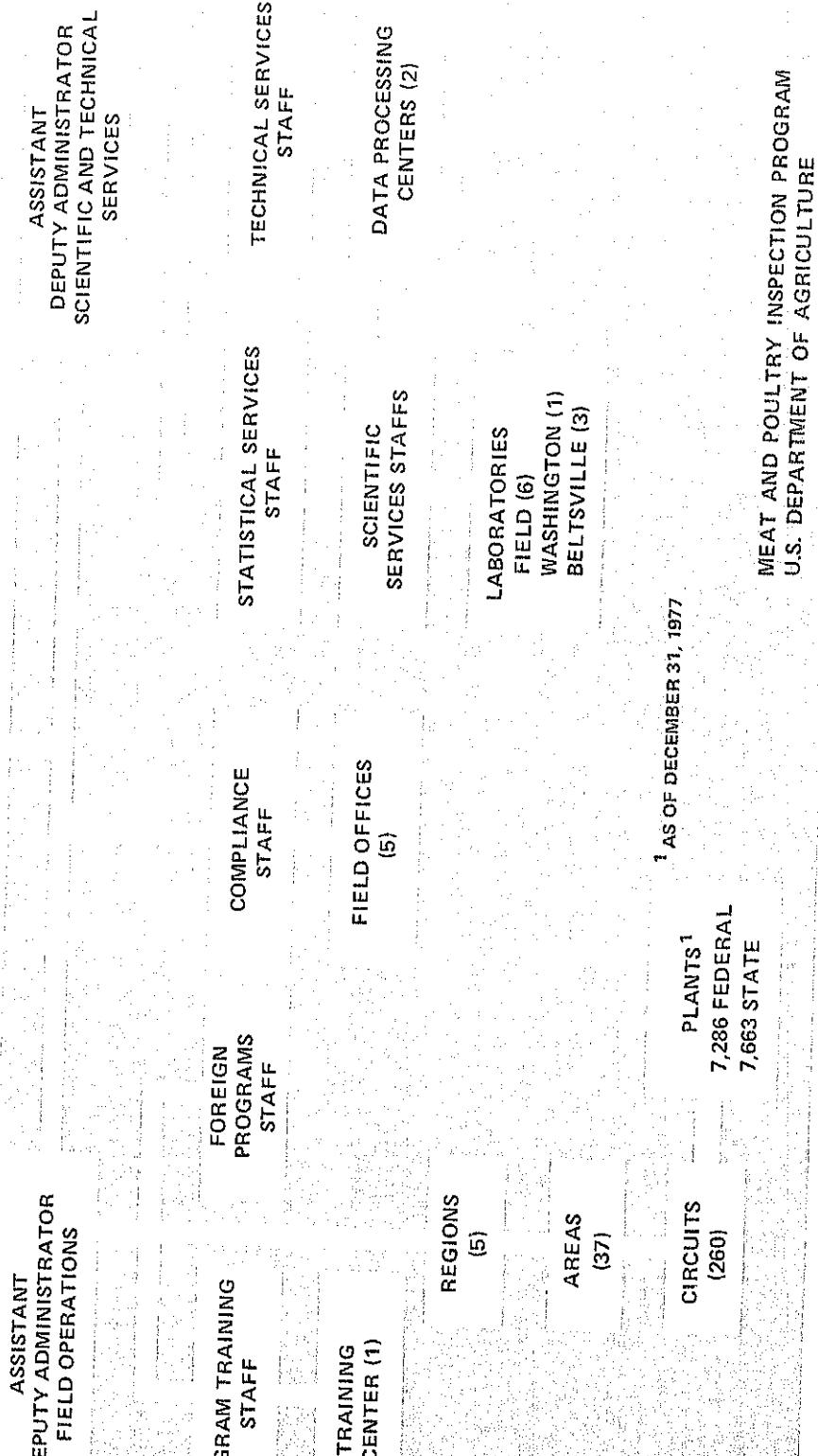
Table 1--Federal inspection--December 31, 1977

Type of Activity	Meat establishments	Poultry establishments	Meat/poultry establishments	Total
Slaughtering operations only	395	227	-	622
Processing operations only	2,920	320	1,714	4,954
Slaughtering and processing	1,109	162	217	1,488
TOTAL	4,424	709	1,931	7,064



ADMINISTRATOR
ASSOCIATE ADMINISTRATOR
FOOD SAFETY AND QUALITY SERVICE

DEPUTY ADMINISTRATOR
MEAT AND POULTRY INSPECTION PROGRAM



¹ AS OF DECEMBER 31, 1977

MEAT AND POULTRY INSPECTION PROGRAM
U.S. DEPARTMENT OF AGRICULTURE

ORGANIZATION

Responsibility for administration of the meat and poultry inspection laws at the beginning of 1977 was assigned to the Animal and Plant Health Inspection Service. The Food Safety and Quality Service was formed in March 1977 by combining in one agency formerly dispersed USDA activities concerning food grading, food procurement, and the egg product inspection programs of the Agricultural Marketing Service and the Meat and Poultry Inspection Programs of the Animal and Plant Health Inspection Service. In establishing the Food Safety and Quality Service, the Secretary recognized the similarity of coverage and compatibility of purpose of grading programs (to determine and reflect food quality) and inspection programs (to assure food safety and proper labeling). He also saw the need for close coordination of grading and inspection programs with Federal procurement programs so that the Government purchases only safe, high quality foods. Although several realignment plans are under consideration, the organizational structure presently provides for a Deputy Administrator with responsibility for the Meat and Poultry Inspection Program. The Deputy Administrator is responsible for three organizational units: Field Operations, Scientific and Technical Services, and a Compliance Staff.

Field Operations, through 5 regional offices and 37 area offices, directs the field force of meat and poultry inspectors who enforce regulations in inspected establishments. It includes a Foreign Programs Staff that assesses the effectiveness of inspection programs in countries exporting product to the United States, and coordinates the inspection of imported meat and poultry products at U.S. ports of entry prior to their release by the Customs Service. Field Operations also has responsibility for the training of all inspection personnel.

Scientific and Technical Services comprises a wide range of staff and support functions. These functions include the development and application of standards for inspection procedures, labels, packaging materials, plant facilities and equipment, product composition, and environmental sanitation. They also include development and application of work standards, automatic data processing, and statistical programs and analysis. Laboratory support is provided in a variety of disciplines including pathology, epidemiology, toxicology, chemistry, and microbiology. The Scientific and Technical Services Staffs are located in Washington with the exception of regionally located laboratories and data processing centers.

The Compliance Staff monitors the activities of persons and firms engaged in the distribution of meat and poultry products and takes measures to assure that laws governing these activities are understood and obeyed. The inplant compliance group conducts reviews of federally inspected meat and poultry establishments to monitor the effectiveness of the inspection program.

The size of this undertaking is extensive. During 1977, Federal inspection was provided by the Animal and Plant Health Inspection Service of this Department at 7,286 establishments (table 2), and supervision was exercised over 7,663 establishments (table 6) under State inspection. To provide the inspection and supervision required by the meat and poultry inspection laws, 9,700 full-time and 1,000 part-time and intermittent Federal employees and 3,600 State employees were utilized.

Table 2--Federally inspected establishments by States--December 31, 1977

State or territory	Meat establish- ments	Poultry establish- ments	Meat/ poultry establishments	Total establish- ments
Alabama	27	25	13	65
American Samoa	1	-	-	1
Arizona	15	1	8	24
Arkansas	13	36	17	66
California	446	73	277	796
Colorado	127	8	34	169
Connecticut	89	8	39	136
Delaware	4	5	2	11
Dist. of Columbia	28	5	3	36
Florida	39	5	31	75
Georgia	33	43	29	105
Guam	4	-	1	5
Hawaii	1	-	1	2
Idaho	18	1	3	22
Illinois	189	16	72	277
Indiana	60	17	26	103
Iowa	66	7	22	95
Kansas	41	3	24	68
Kentucky	133	8	43	184
Louisiana	25	5	6	36
Maine	11	9	6	26
Maryland	21	15	16	52
Massachusetts	154	28	62	244
Michigan	64	6	18	88
Minnesota	71	23	100	194
Mississippi	11	18	10	39
Missouri	232	24	65	321
Montana	31	-	45	76
Nebraska	109	9	49	167
Nevada	6	2	20	28
New Hampshire	13	3	5	21
New Jersey	208	19	87	314
New Mexico	16	-	10	26
New York	505	42	240	787
North Carolina	43	26	17	86

Table 2--Federally inspected establishments by States--(Continued)

State or territory	Meat establish- ments	Poultry establish- ments	Meat/ poultry establish- ments	Total establis- hments
North Dakota	36	-	14	50
Ohio	103	14	31	148
Oklahoma	36	5	11	52
Oregon	99	8	18	125
Pennsylvania	597	69	130	796
Puerto Rico	77	4	31	112
Rhode Island	26	6	8	40
South Carolina	7	6	7	20
South Dakota	13	4	2	19
Tennessee	135	15	72	222
Texas	182	27	91	300
Utah	15	6	8	29
Vermont	11	3	-	14
Virginia	49	23	24	96
Virgin Islands	2	-	3	5
Washington	113	11	36	160
West Virginia	10	3	5	18
Wisconsin	58	15	36	109
Wyoming	1	-	3	4
TOTAL	4,424	709	1,931	7,064
Talmadge-Aiken plants	170	5	47	222
TOTAL	4,594	714	1,978	7,286

FEDERAL INSPECTION

Inspection falls into four general categories: ante-mortem, post-mortem, sanitation, and product processing.

Ante-mortem and Post-mortem Inspection

Poultry and animals are examined for signs of disease or abnormality before slaughter. Following slaughter each individual carcass and its viscera are scrutinized carefully. This inspection establishes the wholesomeness of carcasses and organs intended for human consumption. Those that do not pass inspection are condemned and destroyed for human food purposes. The magnitude of the overall task can be measured by the number of animals and birds inspected in 1977--over 116 million livestock (table 3) and 3 billion birds (table 4).

Since the disposition of carcasses and parts of carcasses has major public health and economic importance, it is essential that inspectors accurately apply uniform standards. For these reasons, veterinary supervisors monitor disposition procedures and the work of the inspectors assigned to each establishment. Staff specialists continually review the inspection standards, and revise standards or develop new standards, as necessary, to insure that inspection is carried out in an effective and efficient manner. Further, staff specialists conduct meetings in each region to insure that veterinary inspectors supervising the work use the same standards in making dispositions of animals, carcasses, and parts.

Table 3--Number of livestock federally inspected, 1973-77

Species	<u>Thousands</u>				
	1973	1974	1975	1976	1977
Cattle	30,495	33,318	36,903	38,991	37,025
Calves	1,810	2,355	3,896	4,437	4,316
Hogs	72,262	77,071	64,927	70,457	69,202
Goats	110	72	49	40	48
Sheep & lambs	9,234	8,556	7,550	6,474	5,752
Equine	161	207	247	293	325
TOTAL	114,072	121,579	113,572	120,692	116,668

Table 4--Number of poultry federally inspected, 1973-77

Class	1973	1974	1975	1976	1977
<u>Thousands</u>					
Young chickens	2,915,336	2,904,727	2,927,590	3,260,340	3,344,593
Mature chickens	189,839	193,328	175,718	180,135	192,840
Fryer-roaster turkeys	12,973	13,901	12,276	12,627	9,431
Young turkeys	108,763	111,540	106,214	120,610	117,930
Old turkeys	1,278	1,308	956	1,098	964
Ducks	11,006	11,552	11,453	13,161	13,750
Geese	329	363	341	323	374
Rabbits ^{1/}	651	718	651	779	849
Others	6	11	19	6	8
TOTAL	3,240,181	3,237,418	3,235,218	3,589,079	3,680,739

^{1/} These animals were inspected under the voluntary inspection program pursuant to the Agriculture Marketing Act of 1946, as amended (7 U.S.C. 1621 *et seq.*).

Sanitation

Clean establishments and equipment are essential to the production of wholesome food. If inspectors assigned to slaughtering and processing establishments find insanitary conditions, immediate correction is required. If the insanitary conditions are such that a product may be adulterated, inspection is withheld and all operations cease. If after appropriate notice a plant fails to take action to eliminate such insanitary conditions, inspection service may be withdrawn.

The sanitation practices and facilities of meat and poultry establishments continue to be a major area for program concern. The microbiological approach is being emphasized by the program as an objective method. Participation by establishments is encouraged and assistance in developing programs is given. There are now more than 130 establishments with approved or pending bacteriological monitoring programs.

Product Processing

Processed and fabricated meat and poultry products continue to increase in volume (table 5) as well as variety and complexity, demanding specialized inspection skills. Emphasis on sound plant quality control procedures has shown good results.

The industry exhibited continued interest for approved process control systems to supplement lot inspection or traditional inspection methods. Approximately 300 process control procedures were reviewed and approved. This continued activity indicates a positive attitude of industry and the regulatory agency concerning product compliance, responsibility, cost return to industry, inspection cost to MPI, and better utilization of inspection time.

Table 5--Processed meat and poultry products inspected, 1973-77^{1/}

Product	1973	1974	1975	1976	1977
[million pounds]					
Meat products	50,552	54,259	51,663	58,639	63,407
Poultry products	22,035	18,723	17,812	22,759	24,900
TOTAL	72,587	72,982	69,475	81,398	88,307

^{1/} These data represent the total weight of finished products including the weight of nonmeat ingredients. In addition, there is some multiple counting of complex products that require inspection at intermediate steps in production.

STATE INSPECTION

Federal-State Cooperative Program

At the end of 1977, 33 States were conducting meat inspection programs and 25 States were conducting poultry inspection programs. Collectively there were 5,204 meat and poultry establishments under State inspection jurisdiction, plus an additional 2,459 exempt establishments under review jurisdiction (table 6).

The Federal Meat Inspection Act and the Poultry Products Inspection Act provide for each State to develop and effectively enforce meat and poultry inspection programs which are at least equal to the Federal requirements. States receive up to 50 percent Federal funding for the cost of their meat and poultry inspection programs. If a State fails to effectively enforce an "at least equal" State program, the Secretary is required to designate the State, and 30 days after such designation is published in the Federal Register, the Federal program and provisions of the Federal Act apply with respect to inspection of establishments, operations, and transactions wholly within the State.

During 1977, the Federal government assumed jurisdiction over the intrastate poultry plants in New York when that State discontinued its inspection program for financial reasons.

State programs are reviewed regularly to determine their compliance with the Federal inspection laws. An evaluation system is in effect which requires a random selection of establishments to be reviewed to determine compliance with seven basic inspection requirements. The requirements include ante-mortem and post-mortem inspection; reinspection; sanitation, water supply, sewage and waste material control; pest control; and condemned and inedible material control.

During calendar year 1977, 1,725 official intrastate plants and 840 exempt operations were reviewed for compliance with basic inspection requirements.

The estimated annual livestock slaughter production from intrastate plants is approximately 7 million head. This represents 6 percent of the total livestock slaughtered under inspection in the United States.

Table 6--State program data, December 31, 1977

	Plants			Employees			
	Official	Exempt	Total	Full Time	Part Time	Total	Budget
Alabama	129	83	212	74	5	79	1,320,760
Alaska	15	1	16	5	8	13	410,736
Arizona	73	31	104	33	2	35	632,485
Arkansas	96	73	169	76	31	107	1,291,126
Delaware	12	5	17	11	4	15	195,270
Florida	314	85	399	166	0	166	2,414,928
Georgia	189	78	267	131	0	131	2,462,853
Hawaii	68	1	69	53	0	53	1,116,584
Idaho	68	92	160	51	36	87	966,610
Illinois	599	40	639	283	195	478	5,459,225
Indiana	173	91	264	132	1	133	2,466,105
Iowa	209	251	560	53	0	53	1,021,741
Kansas	192	91	283	83	114	197	1,594,800
Louisiana	196	74	270	142	22	164	1,824,766
Maine	28	56	84	10	4	14	209,956
Maryland	81	17	98	60	5	65	1,153,084
Michigan	362	57	419	179	0	179	4,319,229
Mississippi	104	34	138	72	0	72	1,224,644
New Hampshire	19	23	42	9	6	15	156,912
New Mexico	48	18	66	18	6	24	325,991
New York - Designated							263,804
North Carolina	268	136	404	177	29	206	2,687,056
Ohio	449	199	648	224	4	228	4,278,457
Oklahoma	136	172	308	99	54	153	1,451,416
Rhode Island	33	2	35	7	11	18	254,965
South Carolina	140	0	140	89	23	112	1,317,378
South Dakota	113	53	166	35	0	35	455,010
Texas	554	211	765	354	0	354	6,227,862
Utah	45	4	49	31	48	79	661,034
Vermont	27	34	61	14	3	17	300,012
Virginia	36	159	195	73	1	74	1,391,179
West Virginia	49	67	116	40	0	40	855,806
Wisconsin	343	184	527	117	3	120	2,515,210
Wyoming	36	37	73	13	16	29	270,846
TOTAL	5,204	2,459	7,663	2,914	631	3,545	\$53,497,840

Table 7--Dates USDA assumed intrastate inspection

State	Meat	Poultry
Arkansas		1-2-71
California	4-1-76	4-1-76
Colorado	7-1-75	1-2-71
Connecticut	10-1-75	10-1-75
Georgia		1-2-71
Idaho		1-2-71
Kentucky	1-14-72	7-28-71
Maine		1-2-71
Massachusetts	1-12-76	1-12-76
Michigan		1-2-71
Minnesota	5-16-71	1-2-71
Missouri	8-18-72	8-18-72
Montana	4-27-71	1-2-71
Nebraska	10-1-71	7-28-71
Nevada	7-1-73	7-1-73
New Jersey	7-1-75	7-1-75
New York	7-16-75	4-11-77
North Dakota	6-22-70	1-2-71
Oregon	7-1-72	1-2-71
Pennsylvania	7-17-72	10-31-71
South Dakota		1-2-71
Tennessee	10-1-75	10-1-75
Utah		1-2-71
Washington	6-1-73	6-1-73
West Virginia		1-2-71

Talmadge-Aiken Act

The Talmadge-Aiken Act (T-A) authorizes the Secretary of Agriculture to enter into cooperative arrangements involving regulatory functions, marketing inspection, and other functions of USDA with State departments of agriculture and other State agencies under specified circumstances. It is the intent of this Act to achieve, through closer State-Federal coordination, greater program effectiveness and economy by avoiding duplications of functions, facilities, and personnel. This Act has been used, and is being used, as a means to carry out Federal meat and poultry inspection with State employees. Under this Act the Secretary of Agriculture is responsible for the conduct of Federal inspection in these establishments. There is no variance in the standards for those establishments operating under a T-A inspection agreement since they are, in fact, federally inspected establishments. At the end of 1977, 222 plants were receiving Federal inspection under T-A authority (table 8).

Table 8--Federal establishments inspected by State employees
under the Talmadge-Aiken Act, December 31, 1977

State	Meat	Poultry	Combination	Total
	establish- ments	establish- ments	meat and poultry establishments	establis- ments
Alaska	1	-	1	2
Arkansas	6	-	1	7
Delaware	6	-	1	7
Georgia	26	-	2	28
Hawaii	-	-	2	2
Illinois	23	2	6	31
Indiana	4	-	3	7
Louisiana	3	-	-	3
Maryland	9	1	7	17
Michigan	17	-	-	17
Mississippi	4	-	1	5
North Carolina	22	1	3	26
Ohio	2	-	-	2
Oklahoma	9	-	4	13
South Carolina	10	1	2	13
Utah	2	-	-	2
Virginia	26	-	14	40
TOTAL	170	5	47	222

SURVEILLANCE AND COMPLIANCE ACTIVITIES

The Compliance Staff monitors the activities of persons and firms engaged in the preparation and distribution of meat and poultry products to see that laws governing these persons and firms are understood and obeyed. The Compliance Staff is also responsible for documenting alleged violations of law; for initiating detention actions to control adulterated, misbranded, and uninspected products found in distribution channels; for conducting systematic reviews of all federally inspected establishments; and for initiating and coordinating actions with respect to withdrawals of inspection from establishments.

In 1977, periodic surveillance continued of persons and firms engaged in the meat and poultry and allied industries (wholesalers, brokers, animal food processors, renderers, warehouses).

The Compliance Staff documented 919 alleged violations of the meat and poultry inspection Acts in 1977. Some of the alleged violations involved more than one individual or firm. Minor violations are closed with letters of warning under the authority of the Acts when the Secretary believes that the public interest will be adequately served thereby.

In 1977, 89 cases were referred to appropriate U.S. attorneys, through the Office of the General Counsel, with a recommendation either for prosecution or closing the case with a warning letter. Of the 26 prosecutions successfully completed, 16 were in Puerto Rico. Most of the Puerto Rican cases involved slaughtering animals without inspection or preparing, transporting, and selling adulterated uninspected meat products intended for human food. Other violations included selling adulterated meat or poultry products, misrepresenting uninspected meat products as inspected, and failing to denature inedible meat products to preclude their use as human food.

In 1977, 31 administrative actions to withdraw Federal inspection from official establishments were closed with consent orders. Four actions were pending and one additional action was initiated during the year based on an assault on Federal officers.

Compliance officers completed detention actions involving over 16 million pounds of product. The product is normally brought into compliance or, if unwholesome or otherwise adulterated, destroyed for food purposes. If voluntary dispositions are not made, seizures and dispositions by Federal courts are necessary. In 1977, 12 seizures involving 27,185 pounds of product were made. The Compliance Staff participated in monitoring 10 recalls involving over 253,000 pounds of meat and poultry products.

The Compliance Staff conducted 2,887 reviews of the adequacy of inspection in federally inspected establishments (table 9). These reviews are conducted on a systematic basis with additional followup reviews, as necessary,

based on the seriousness of deficiencies found in previous visits. Reports of deficiencies are given to program managers for appropriate actions at the local level and for long-range improvements nationwide.

The Compliance Staff continued cooperative Federal-State development and training programs for intrastate compliance activities. Cooperative Work Plan agreements continue in effect in 27 States and one territory.

IMPORTS AND EXPORTS

Import activities of the 1977 foreign meat inspection programs were reported to Congress in March 1978.

Import activities for poultry inspection, controlled under regulations identical to those that apply to meat, require no formal report. Canada, France, and Hong Kong are authorized to export poultry products to the United States. Work continues on recognition of this poultry inspection system of Israel.

The Foreign Programs Staff continues to assist in the export of meat and poultry to foreign countries. Formal certification is required for meat and poultry plants that export to Germany (Federal Republic), France, Italy, and the United Kingdom. Foreign officials representing the aforementioned meat and poultry inspection systems assure compliance with their requirements by inplant reviews or written certification from the agency.

In the United States, there are 10 meat plants and 21 poultry plants certified to export to the Republic of Germany, 19 horsemeat plants certified to export to France, 17 meat plants to Italy, and approximately 1,000 meat and poultry plants certified to export to the United Kingdom.

Table 9--Compliance Staff activities, 1973-77

Type of action	1973	1974	1975	1976	1977
Compliance reviews conducted	33,880	43,163	42,786	44,367	46,723
Apparent violations detected	789	845	905	858	919
Letters of warning issued	868	955	990	1,105	1,047
Cases referred to Department Office of Investigation	52	51	60	25	12
Cases referred to Department Office of General Counsel	95	79	89	122	146
Cases referred to Department of Justice by General Counsel	40	38	58	74	89
Cases prosecuted by Department of Justice	11	14	12	8	26
Detention actions on product	793	769	931	955	1,012
Establishments reviewed	806	1,393	2,793	2,725	2,887

STAFF ACTIVITIES

Inspectors in the establishments are supported by a Washington, D.C., unit known as Scientific and Technical Services, which provides support functions essential for program operations. This unit has three basic divisions: Scientific Services, Technical Services, and Statistical Services.

Scientific Services

This staff provides analytical and consultative services in support of the national meat and poultry program and to State and other Federal agencies in the fields of chemistry, microbiology, pathology, toxicology, epidemiology and residue evaluation. The analytical services are provided by the Washington, D.C.-Beltsville Staff Laboratory; National Residue Laboratory in Peoria, Illinois; Western Multidisciplinary Laboratory in San Francisco, California; Eastern Multidisciplinary Laboratory in Athens, Georgia; and chemistry laboratories in Omaha, Nebraska, Kansas City, Kansas, and St. Louis, Missouri. Analytical support is also provided through contracts with State laboratories in Kentucky and New York. The consultative services are provided by four staffs: Chemistry; Microbiology; Pathology, Toxicology, and Epidemiology; and Residue Evaluation and Planning.

Chemistry

The Chemistry Staff provided analytical support to the program in determining the health and safety aspects of mechanically deboned meat and mechanically deboned poultry.

The Methods Development Unit participated in three studies for the presence of nitrosamines in bacon.

The Chemistry sections analyzed more than 17,500 tissue samples for sulfa drug residues in an accelerated testing program. A rapid screening test for sulfa drug residues, using blood as the target tissue, was evaluated.

In 1977, a total of 88,585 samples were analyzed by Federal laboratories, 3,396 by State laboratories, and 28,000 by certified laboratories.

Microbiology

The main microbiology laboratory in Beltsville, Maryland, and the microbiology sections of the multidisciplinary laboratories located in Athens, Georgia, and San Francisco, California, provide consultative and analytical laboratory services for field personnel, various staffs within the Meat and Poultry Inspection Program, and other Federal, State, and local agencies. In 1977, 18,846 samples were analyzed by the three microbiology laboratories and a total of 99,466 tests were performed on these samples.

An increase of 6.9 percent was seen in the number of samples examined and a concomitant 11.25-percent increase in the number of tests performed. These changes reflect an increasing awareness of the needs for these types of analyses.

Pathology, Toxicology, and Epidemiology

The Pathology, Toxicology, and Epidemiology Staff is responsible for the development of programs for providing the laboratory and consultative services required for the diagnosis of disease conditions of food animals, and for the detection of infectious, toxic, or other human health hazards that apparently normal animals may bear in their edible parts. It receives reports of meatborne health hazards and takes action to contain and eliminate them. Conducts epidemiological investigations and recommends actions to prevent the recurrence of such problems. The staff also develops data regarding diseases that may be acquired by humans as a result of handling or consuming meat, and recommends strategies for their control.

A major activity of the staff has involved the development and evaluation of new inspection systems capable of producing information for the purpose of detecting adulterative, infectious, toxic, traumatic, tumorous, and abnormal physiological conditions of food animals. During 1977, one of these systems, which had been under development for some time, was adapted to an automated testing machine. This will enable an evaluation of the system through large scale testing. Data obtained will be used to guide further test development and to analyze various strategies for program application.

Reports of 299 alleged, actual, or potential meatborne health hazards were received. Of these, 155 involved human illness. Several incidents involved large numbers of people and required close cooperation with local, State, and Federal public health related agencies to achieve, control, and complete the necessary epidemiological evaluations.

Several outbreaks of Salmonella gastroenteritis attributed to precooked roast beef were jointly investigated by the PTE Staff, the Microbiology Staff, the Center for Disease Control, and State health offices. It was found that the organisms deep in the roasts were not destroyed by the cooking temperatures employed. As a result, a new regulation was published in the Federal Register, September 2, 1977, requiring that such products be cooked to an internal temperature of 145° F.

Additional incidents of significance that have been investigated by staff epidemiologists have included inadequately processed barbecue sauce, under-processed Argentine canned beef, trichinosis caused by Linguicia sausage and a suspected ornithosis outbreak among USDA inspectors.

The pathologists of the field laboratories and the national staff conducted a series of field laboratory reviews and participated in field program correlation meetings to insure uniformity of handling carcass dispositions.

Projects were completed involving swine tuberculosis prevalence, bone in mechanically deboned meat and poultry, destruction of trichina in ham by ambient temperature curing, and the histopathological effects of hexachlorobenzene.

Field program veterinarians submitted 4,656 cases for diagnostic assistance and requested 2,400 telephone consultations from field and national Laboratory pathologists.

A number of scientific papers were prepared for presentation at national and international meetings and for publication.

Residue Evaluation and Planning

The activities of the staff have been steadily increasing in the area of working with livestock and poultry industries to prevent the occurrences of residues. These activities have been expanded without any lessening of the efforts placed in planning the ongoing residue monitoring program. Time became available as the regional offices became proficient in conducting the day-to-day surveillance programs.

The 26 reported violations for poultry reflect the efforts of the poultry industry to control residues. In fact, for no single compound-species combination was there an indicated violation rate of over 2.0 percent. The number of violative samples for livestock is much higher due to several factors--the primary factor being the heavy sampling of swine for sulfonamide residues. In that one classification, there were 1,242 violations in 9,411 samples. Also, the staff has been working on an antibiotic residue problem in cattle and calves, and in the 1,321 samples collected from these two categories, there were 67 violations. Thus, in these three species of livestock, drug combinations accounted for 1,309 violations of the 1,367 violations found by the monitoring program.

To successfully approach these major problems, the staff is in the process of developing analytical tests which can be utilized at the time of slaughter. In addition, they have worked with the swine industry to fully inform the producers of the precautions that must be taken to use sulfonamide drugs without causing residue problems. To determine the conditions under which antibiotic residues are occurring in cattle, the staff is in the process of establishing disease condition-antibiotic residue combinations. The staff can then instruct inspectors to include these conditions under the program that detains carcasses suspected of containing violative residues.

The cooperative residue programs, started with individual members of the poultry industry, have proven successful. Regional offices and plant inspectors consider the industry is well informed, and check-samples analyzed revealed no hint of any problems. In fact, the companies informed the staff of potential problems and their corrective activities. A normal monitoring program could have very easily missed these problems.

Table 10--Red meat and poultry samples analyzed
for specific residues, 1977

Residue	Red meat samples analyzed	Poultry samples analyzed
Chlorinated hydrocarbon pesticides	1,431	885
Antibiotics	3,601	927
Organophosphorus compounds	-	-
Arsenic	478	398
Trace metals	419	-
Hormones	1,618	-
Sulfa drugs	9,790	668
Drugs, general	922	441
TOTAL	18,259	3,319

Statistical Services

The Statistical Services Staff is concerned with the quantifiable aspects of the Meat and Poultry Inspection Program. It is involved with estimating parameters and establishing degrees of assuredness associated with proposed actions. It develops product-acceptance sampling procedures and designs product standards studies. Much time and effort are spent in problems associated with chemical residue monitoring. Evaluation of published articles and proposed experiments are principal activities. Data reduction and mathematical and statistical computing are among the staff's activities. The staff was also involved in consumer surveys to determine the degree of understanding of product labels.

Technical Services

This staff provides technical and consultative support to the National Meat and Poultry Inspection Program. It operates in a diversity of areas: inspection standards and regulations; labels and packaging; systems development and sanitation; plant facilities and equipment; product standards; and work standards and data services. All program publications and issuances are handled by the Issuance Coordination Staff.

Systems Development and Sanitation

A proposal to revise the net weight regulations was published in the Federal Register, December 2, 1977. This proposal was in response to a petition by the State of California, supported by 47 other States, many consumers, and several farm organizations and consumer groups. Previously, comments had been received on the subject of net weight from consumers, the meat and poultry industry, retailers, and State weights and measures officials. For the first time, changes are being proposed which would eliminate free liquid as a part of net weight of the product. If adopted, the proposal will aid in developing uniform application of net weight compliance nationwide and will allow for concurrent jurisdiction by State and local weights and measures authorities.

Work Standards and Data Services

This staff is responsible for the work standards and automated data processing activities of the Meat and Poultry Inspection Program. These activities include the development and application of work standards, maintenance of

the workload-based manpower forecasting and control system, and formulation of indices for measuring productivity trends. The staff also provides for planning and implementation of data services applications, assists with computer systems design, and operates the various data processing facilities. In addition, the staff prepares and publishes statistical and management data used by MPI and other USDA agencies, other Government departments, research organizations, and industry at large.

In 1977, the two data services centers were further upgraded and a distributive data network concept instituted. A workload data collection system designed to facilitate implementation and maintenance of work measurement standards was also initiated. Action continued on the refinement and automation of the MPI staffing assignment and reporting system.

Product Standards

An evaluation of the health and safety aspects of the use of tissue from ground bone (TFGB, formerly called mechanically deboned meat) was completed by a panel of scientists in July 1977. The panel was convened at the request of the administrator of the program and consisted of 12 Government scientists who are experts in a wide range of subject areas dealing with the health and safety aspects of foods. The panel found no health hazards in limited use of this material, but because of uncertainties in knowledge of fluoride consumption in infants and young children, the panel recommended that the material not be allowed in junior and baby foods. The panel also recommended that the material be identified in the labeling of products in which it is used.

A proposed regulation dealing with the use of TFGB was published in the October 1977 issue of the Federal Register.

The comment period for the proposal ended December 31, 1977, but because of intense public interest and response, the comment period was reopened for an additional 60 days and a public hearing held in February 1978.

General interest in nutrition has been increasing in the meat and poultry industries. This interest has been evident in the past year in two areas. First, infant food manufacturers, in view of the controversy surrounding food additives in infant food, have reformulated many products to exclude salt and are placing information on their labels about the sodium content. Also manufacturers are beginning to point out to the consumer the relative lean-to-fat properties of their products and to market new products that are lower in fat than the traditional standards.

Table 11--Product labels reviewed, 1973-77

Activity	1973	1974	1975	1976	1977
Labels processed	172,281	127,445	127,642	125,994	112,974
Labels not approved	13,522 (7.6%)	6,428 (5.1%)	8,794 (6.8%)	9,712 (7.7%)	10,030 (8.9%)

Table 12--Plant facilities and equipment reviewed for compliance with sanitary standards, 1973-77

Activity	1973	1974	1975	1976	1977
Drawings	4,064	3,491	3,267	3,981	3,630
Equipment units	990	538	496	951	1,037

TRAINING

Poultry and meat inspection training is conducted at a single central facility located in Fort Worth, Texas. Formal lectures and laboratory demonstrations are the primary method of training at the Fort Worth Training Center; however, an audiotutorial learning center has been established and its usage has been greatly expanded. Audiovisual teaching machines have been supplied to the field offices. As programs and materials are proven through the learning center in Fort Worth, they are made available to the field locations. This offers training in smaller units of time and is directed to specific needs. Increased efficiency at reduced cost is the end result.

The major effort of the training development staff has been devoted to the design, production, and evaluation of self-instructional training units for field personnel. At present, over 40 units (self-instructional lessons and guides) are in the development stage. These units are representative of a variety of media (printed publications, filmstrips, slides, and videotape) and cover a broad range of job skills for both inspectors and veterinarians.

Records for self-instructional training of less than 8 hours are not routinely maintained. A method of recordkeeping for these small units of training is being developed.

Table 13--Personnel training during calendar year 1976

	Veterinarians	Inspectors	Other
At training centers:			
Federal.....	418	753	1
State.....	21	42	0
Foreign.....	5	7	0
TOTAL.....			1,247
At work location:			
Federal.....	378	16	4
State.....	40	25	180
Other (Correspondence English)			190
(Correspondence Mathematics)			65
TOTAL.....			898

OTHER DEVELOPMENTS

Salmonella Advisory Committee

The Salmonella Advisory Committee, appointed by the Secretary of Agriculture in 1975, submitted its recommendations for the reduction and control of salmonellosis. The committee was composed of representatives of all phases of the meat and poultry food chain: feed manufacturers, breeders, producers, processors, consumers, Government regulatory and food researchers. Specific recommendations were made in each of these areas in the report entitled: "Recommendations for Reduction and Control of Salmonellosis."^{1/}

Codex Alimentarius Commission

During the year, program members attended meetings of the Codex general committees dealing with methods of analysis, sampling, and food labeling, as well as meetings of the commodity committee dealing with soups and broths. The program has serious difficulty with net weight standards as presently proposed and will be working in future meetings to modify these standards to conform more closely with U.S. policy. In the committee on soups and broths, a standard for bouillon was agreed upon and submitted to the commission for adoption as a recommended international standard.

In response to a questionnaire from the commission, the program recommended that a code of practice of post-mortem judgment of meat be developed by the committee on meat hygiene. This code would complement the existing code of practice for ante-mortem and post-mortem inspection procedures and would complete the basic phase of meat inspection within Codex. The program also recommended that the scope of the committee on processed meat products be expanded to allow the development of standards for poultry products.

1/ The report can be obtained by writing to:

USDA-FSQS
Systems Development and Sanitation Staff
Room 2165, South Building
12th Street and Independence Avenue
Washington, DC 20250

Expert Panel on Nitrites, Nitrates, and Nitrosamines

The Secretary's Expert Panel on Nitrites and Nitrosamines completed its deliberations in September 1977. The final report containing the recommendations of the panel will be published in 1978.

In another action, the program has given the industry a deadline of March 17, 1978, for submitting data demonstrating whether by modification of recipes, processing procedures, or by any other means bacon can be produced without the formation of cancer-causing nitrosamines during either its processing in the plant or its cooking for eating. The program experts will review and verify the data submitted by industry. They will also conduct their own tests of representative samples of bacon on the market.

Bacon is the first cured meat product to be critically evaluated for cancer-causing hazards because with some consistency nitrosamines have been demonstrated to form in cooked bacon. Industry will be required to conduct market tests to collect data on other cured meat products--such as sausages, hams, luncheon meat, and canned products--to determine whether a nitrosamine problem may exist. A time schedule based on a decrease in the suspected hazard of nitrosamine formation in these products was established. The entire schedule spans a period of 2 years.

Summary of Key Program Initiatives Taken in 1977

Nitrite and Nitrosamine Problem--USDA is requiring industry to provide proof that preformed nitrosamines (a carcinogenic substance) are absent from cured meat products after processing and preparation for eating. On October 17, 1977, a schedule was published in the Federal Register requesting the industry to provide data that supports the safety of cured meat products.

Net Weight Proposal--On December 2, 1977, the Department published in the Federal Register a proposal that would provide State and local weights and measures officials a usable guideline to assure that consumers are getting an honest measure of packaged meat and poultry products. The proposal would also eliminate allowances for product shrinkage prior to retail sale and for exclusion of free liquid as a part of the net weight.

Salmonella Food Poisoning From Roast Beef--USDA took regulatory action on September 2, 1977, requiring processors to cook roast beef to 145° F. in order to destroy bacteria which cause salmonella food poisoning. This action was prompted by several outbreaks of salmonellosis linked to this product. Alternative cooking temperatures and times are also being studied that would give processors more flexibility in beef processing operations.

Tissue From Ground Bone--USDA carefully reviewed all safety questions concerning the processing of this material and on October 6, 1977, published in the Federal Register a proposal establishing limits on its composition and use. It was also proposed to highlight its presence by making it part of the product name thus enabling consumers to make free choices based on the knowledge of the product's content.

Imitation Ham--The Department took action against several meat processors that had labels approved for "imitation" ham--a product containing more water than permitted under the "water added" designation.

Dioxin Residues--Dioxin occurs from the breakdown of polychlorinated phenols (PCP). Since PCP has been used for years as a wood preservative in the farming environment it may offer a source of dioxin residue. In 1977 a survey conducted by USDA identified the presence of dioxin residues at levels of less than one part per billion in some survey samples. Further evaluation of these data is continuing.

Sulfa Drug Residue Problem--USDA made plans late in 1977 to coordinate formal discussions and plans aimed at resolving the sulfa residue problem in swine. Regulatory officials of USDA and FDA, the drug industry, swine producers, and other interested parties were scheduled to meet in January 1978 to inaugurate that effort.

Broadened Public Participation--In an effort to improve the balance and quality of decisionmaking, positive steps were taken by USDA in 1977 to get a broader base of public participation on a number of key issues:

- a. A consulting firm, Booz, Allen, and Hamilton, contracted by the Department to study ways of reducing the cost of inspection, presented their

report in June 1977. The proposals were published in the Federal Register and a special mailing of the notice was made to public interest groups. Three public briefings and a hearing were held. A group of eight people representing consumer advocacy groups was given special onsite briefings on the present system of inspection at USDA's expense; four later participated in the hearings.

b. The Expert Panel on Nitrites and Nitrosamines was expanded to include a broader base of consumer and scientific representation.

c. In May, the Food Safety and Quality Service published in the Federal Register a notice to solicit information and opinions on the voluntary use of metric units of measurements for all purposes under the jurisdiction of the Federal Meat and Poultry Inspection Program. Approximately 2,600 comments were submitted. A strong nationalistic feeling was indicated in the 900 comments against metrication. The possible high cost of conversion was mentioned in 500 others. Among the 900 comments in favor of metrication, the majority would accept a combination of both metric and present measurements.

d. The use of standardized names throughout the country for retail meat cuts has received attention for a number of years. A publication to improve product identification was developed for that purpose and represented a wide range of participation from parties interested in meat merchandizing. This publication was distributed to more than 200 consumers asking for their comments.

